

# ED EMSHWILLER'S *SKIN MATRIX*: AN INTERVIEW

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Video stills from *Skin Matrix* by Ed Emshwiller. PHOTOS: KIRA PEROV

Appropriately enough for someone who began his career as a science fiction illustrator, Ed Emshwiller has always worked with the most advanced technologies available to a visual artist. In his pioneering experimental films of the fifties and sixties, Emshwiller seemed to get more out of 16mm technology than anyone around, combining technical virtuosity and poetic vision in classic works like *Relativity*. As a video artist in the 1970's, he was among the first to explore the limits of the Scanimat system (*Scapemates*, 1972), the instant-replay videodisc (*Crossings and Meetings*, 1974) and computer-controlled editing (*Dubs*, 1978), revealing in each case new expressive possibilities for the electronic medium. By the late seventies, Emshwiller had become intrigued with computer animation, and in 1979 at New York Institute of Technology he produced yet another classic, the haunting *Sunstone*, whose central image — an enigmatic Mona Lisa-like face of stone that transforms into a radiant sun — has become no less than a cultural icon heralding the New Age of computer art.

As might have been expected, Emshwiller's newest videotape, *Skin Matrix*, relies heavily on computer graphics. It is a hypnotic and beautiful work, with some of the most unusual imagery to be seen anywhere these days. And yet the computer Emshwiller used is about as far from state of the art as one can get — a tiny Bally Arcade designed for playing video games, which the artist purchased for \$50 at a discount store. In a deliberate move to reaffirm a truth our culture seems to have forgotten — that art is an act of the imagination, independent of the technology through which it's expressed — Emshwiller has produced in *Skin Matrix* an elegant and mysterious visual poem using the simplest and most

accessible of electronic tools. We talked about the making of the tape, and about its meaning for Emshwiller in both a technological and poetic sense.

**GENE:** Your working method was very interesting. It's like the slogan of the Chicago community, "We do it in our living rooms." You did all the computer graphics and assembly editing in your living room using a Bally Arcade and a Betamax. You made a very elegant tape using very simple technology.

**ED:** That was one of my deliberate constraints from the beginning. It's like an artist who says I'm going to work with crayons and newsprint. Art is always a function of the imagination in interaction with tools. And all tools have limitations, whether it's a Bally or a Cray. I've always been fascinated by the way in which the tool influences your thinking. We artists arrogantly believe we control what we do. But no — we respond to an environment which includes our tools and limitations of time and resources. The biggest limitation is our own imagination. It was an interesting challenge for me, having made *Sunstone* with state of the art equipment, to see if I could do something aesthetically satisfying with the Bally.

**GENE:** The success of the tape comes at least in part from the way you respected the limitations of your instrument. The Bally doesn't make good images so you didn't try to do that; instead, you used it to generate very beautiful animated key patterns, a function it serves very well.

**ED:** Yes. I took the idea of anti-aliasing and turned it upside down. I said, that's a fascinating element to work

with; let's put it up front and really see what it is. I didn't even use the crude pixel resolution that's standard with the Bally — 88 by 160. Nothing so fine as that. I made it into larger blocks that were a minimum of five or ten pixels on a side. I'd program a series of those and stick them together to get that deliberate blockiness so there'd be no question about it: this is personal computer graphics. But at the same time it evokes a sense of primitive art forms. There are several computer-graphic heads composed of big blocks, almost like I was deliberately doing an Aztec type of drawing. The challenge was to use a simple concept with enough variation to sustain tension and interest.

**GENE:** How long did you work on it?

**ED:** Two years. Most of the visual material was gathered with a 35mm still camera and a portapak. I shot between 600 and 700 slides of stones, wood, sand dunes, all over the country. The primitive masks and statues were shot at the Metropolitan Museum. They're mainly Aztec, Chinese and Egyptian. I also shot about twenty hours of videotape. The only studio work was usually with a live model over whom I was projecting other images. And I used the studio for mixing and for the final CMX edit, which was mastered on one-inch. I edited for six months at home using a Betamax and a Sony 5850.

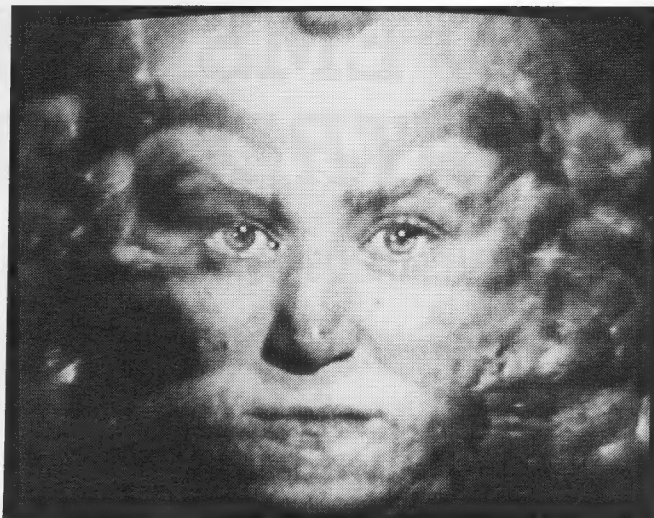
My first assembly edit was three hours and forty minutes culled from twenty hours. I wrote the edit list for the CMX that way and just took it into the studio and put together two versions of the tape in five ten-hour days of editing. The longest version is 17 minutes. That's a ratio of about 70 to one.

**GENE:** The aesthetic seems to be a kind of matting or gating of imagery in different ways.

**ED:** Yes. Layering or combining images. That's where the computer played a very big role. The image generated by the computer was the gate for the on and off of a given video source. I wrote about 240 programs to do that. I'd get home around five in the afternoon, collapse on the couch, put the Bally in my lap and the monitor on the coffee table and program until midnight or two in the morning almost every day. That took many months while I was also working simultaneously as Provost of Cal Arts and Dean of the School of Film and Video. My biggest problem was that the Bally is only a 4K computer and Basic takes up 2K by itself, so you have less than 2K to write your program in. So for a given video section I'd have to use several small programs to achieve the effect I wanted. But I wound up using only about 20 out of the 240 graphics programs I wrote.

**GENE:** How are they structured?

**ED:** Some are set in motion within prescribed constraints. For example an image of a woman gets drawn and undrawn, various parts of her are keyed in and out, little boxes within her jump around. That's a form of animation based on a series of branches, each of which enables certain random actions to take place. There's a frequency attached to each of these things. For in-



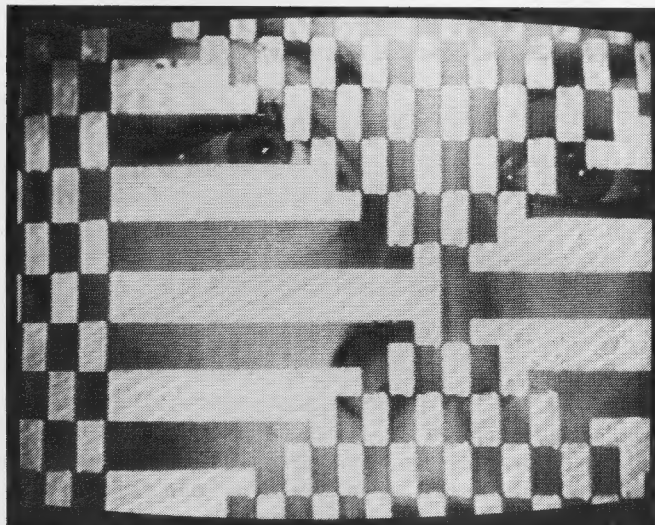
stance, the grid pattern that comes over her is a branching point that might occur one time out of twenty-four. The random aspects are all set within carefully defined constraints. A transformation will occur at certain random intervals and will be repeated some number of times within upper and lower limits. For example, within an eye's blink it'll happen between three and seven times, and then move on to the mouth. The frequency with which these things happen is determined by the program.

**GENE:** You play with figure-ground relationships. The image will poke through and then be pushed to the back.

**ED:** Yes. That kind of play always fascinates me. The idea of using flat two-dimensional patterns but creating a sense of depth by shifting back and forth between subtle movements. In the physiology of our perceptual system, the way we perceive depth isn't only determined by scale, or luminance or color, it's very often a function of movement. A one-eyed person often can determine what's in front of something else by motion.

**GENE:** How did you combine all this material?

**ED:** The way I work involves a lot of trial and error, a lot



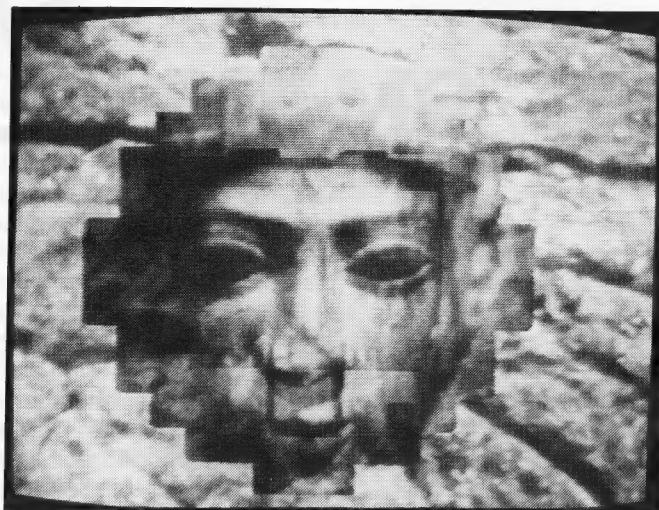


of serendipity and selecting — but it is heuristic in the sense that I try to create conditions which will combine to give me certain things I want. In the studio, the slides were put in the telecine, as well as projected directly on performers. So I'd have slides in the background and in the foreground, an actress with slides projected on her — which might be the same or different texture as the background. Then I'd have a roll-in tape with other textural imagery, and the computer graphics would be on another monitor with a camera taking that image and using it as a wipe between, say, the roll-in tape and the tape being recorded at the time. The roll-in tape might be an earlier version of a combination of all the elements I just said. So that would be layered again. I'd mix everything with the switcher. For example, the section I call the 'grid section' has four video images happening simultaneously. I had various possibilities I could call up with my key pad. I could say I want the series of vertical bars to occur, and push that key. Or there was a horizontal set, or one with expanding or contracting boxes. Or I could do all of them in series and start over again, and they'd run through the sequence. In real time, I could be watching the monitor and call up one of the wipes. The studio switcher was taking that information and allowing it to combine various images. For instance, in the background you see dunes and in the middle ground there's the edge of a body, skin, and in what would normally be the shadow of the body contour are wood textures or rocks, and within those might be another hand touching a body. It was a very complicated tape to make. People talk about video being immediate — well there's a 17-minute tape that took two years, 700 slides, 20 hours of videotape, many months of computer programming and six months of editing.

**GENE:** The tape seems to be primarily about texture.

**ED:** Texture and energy. Natural patterns. At one point I was thinking of calling it *Energy Traces*. Energy is manifest of course as light and as electronic energy in computer graphics and video. And then there's pure energy — like the waves of pure energy at the beginning of the tape. It's very literal. Slashes of energy that become waves. And the next thing you see are those waves solidified in an organic structure which is a wood grain, a stump. That is penetrated by my own chest, my flesh, my body, which like the stump is a product of energy transformations. Then it goes on into textures and patterns in nature — skin, wood and sand dunes. And I used a lot of faces because they represent the energy of the living organism, the cognizant being — the eyes, the knowing manifestation of nature. Next we see the creations of that imagination — explorations of the "inner face" and the recognition of connections. At the end, there's a transformation of a woman into a robot, a pseudo or imaginary woman, a woman of the mind who doesn't even exist. A kind of spirit. Mind is also a manifestation of energy. Those are some ideas that informed my selection of materials when I was creating the space.

**GENE:** The masked faces are very mysterious.



**ED:** For me they have many different meanings. One has to do with mortality, another with signs and symbols — things we create to represent ourselves. Persona. The visual transformations result from going between the two, dividing up the face with that which represents it. There's a poetic resonance between the statues and the women whose faces I videotaped. The allusions are multiple, which is what I mean by poetic. Nodes which can relate one to another. It also makes me think of points of light which emit out possibilities that create interference rings when they encounter one another. And those interference rings form images which have a resonance of their own.

**GENE:** This theme of breaking through to some inner reality runs throughout all your work.

**ED:** Yes. I see *Skin Matrix* very much in continuum with earlier works like *Relativity*, *Scapemates* and *Sunstone*. It reiterates basic themes through new and slightly different forms. For example, in *Skin Matrix* I used simple technology to produce a very complex image structure and dense soundtrack, whereas in *Sunstone* I used complex technology to produce simple images and very sparse sound. That was a deliberate opposition, a stretch in the other direction. □

